Listing of the Claims:

Below is a listing of all claims using a strikethrough and underlining to show changes.

1. (original) A magnetoelectric magnetic field sensor, comprising:

a) a magnetostrictive layer having a longitudinal bias magnetic field, wherein the magnetostrictive layer has a L/T aspect ratio greater than 1;

b) a piezoelectric layer bonded to the magnetostrictive layer; and

c) a means for creating the longitudinal bias magnetic field in the magnetostrictive layer.

2. (original) The magnetoelectric magnetic field sensor of claim 1, wherein the bias magnetic field is in the range of 100-1000 Oersteds.

3. (original) The magnetoelectric magnetic field sensor of claim 1, wherein the piezoelectric layer is poled in the perpendicular direction.

4. (withdrawn) The magnetoelectric magnetic field sensor of claim 1, wherein the piezoelectric layer is poled in the longitudinal direction.

5. (original) The magnetoelectric magnetic field sensor of claim 1, wherein the magnetostrictive layer has an L/T aspect ratio of at least 2.

6. (original) The magnetoelectric magnetic field sensor of claim 1, wherein the magnetostrictive layer has an L/T aspect ratio in the range of 1.2-1000.

7. (original) The magnetoelectric magnetic field sensor of claim 1, further comprising a second magnetostrictive layer bonded to the piezoelectric layer.

8. (original) The magnetoelectric magnetic field sensor of claim 1, further comprising a plurality of alternating magnetostrictive layers and piezoelectric layers.

9. (original) The magnetoelectric magnetic field sensor of claim 1, further comprising a voltage detector electrically connected to the piezoelectric layer, and wherein a piezoelectric capacitance and an internal resistance of the voltage detector have an RC cutoff frequency of less than 1 Hz.

10. (original) The magnetoelectric magnetic field sensor of claim 1, wherein the piezoelectric layer is perpendicularly poled, and a ratio of $\frac{\text{total magnetostrictive layer thickness}}{\text{total device thickness}}$ is in a range that provides a sensitivity within 70% of a maximum sensitivity calculated according to Equation (1).

11. (withdrawn) The magnetoelectric magnetic field sensor of claim 1, wherein the piezoelectric layer is longitudinally poled, and a ratio of $\frac{\text{total magnetostrictive layer thickness}}{\text{total device thickness}}$ is in a range that provides a sensitivity within 70% of a maximum sensitivity according to Equation (1).

12. (original) The magnetoelectric magnetic field sensor of claim 1, wherein the piezoelectric layer is perpendicularly poled, and a ratio of $\frac{\text{total magnetostrictive layer thickness}}{\text{total device thickness}}$ is in a range that provides a sensitivity within 85% of a maximum sensitivity calculated according to Equation (1).

13. (withdrawn) The magnetoelectric magnetic field sensor of claim 1, wherein the piezoelectric layer is longitudinally poled, and a ratio of $\frac{\text{total magnetostrictive layer thickness}}{\text{total device thickness}}$ is in a range that provides a sensitivity within 85% of a maximum sensitivity according to Equation (3).

14. (withdrawn/currently amended) The magnetoelectric magnetic field sensor of claim 1, wherein the piezoelectric layer is longitudinally poled, and a ratio of $\frac{\text{total magnetostrictive layer thickness}}{\text{total device thickness}}$ is in the range ~~0.50-0.8~~ 0.5-0.8.

15. (original) A magnetoelectric magnetic field sensor, comprising:

a) one or more magnetostrictive layers having a longitudinal magnetization;

b) one or more piezoelectric layers bonded to the magnetostrictive layer, and

wherein a thickness ratio of adjacent magnetostrictive and piezoelectric layers is within 50% of a value given by the equation $n_{optim} = \frac{1}{1+\sqrt{\alpha}}$.

16. (original) The magnetoelectric magnetic field sensor of claim 15, wherein the piezoelectric layer is perpendicularly poled, and $\alpha = (1-k_{31,p}^2)\frac{s_{11}^E}{s_{33}^H}$.

17. (withdrawn) The magnetoelectric magnetic field sensor of claim 15, wherein the piezoelectric layer is longitudinally poled, and $\alpha = \frac{s_{33}^D}{s_{33}^H}$.

18. (original) The magnetoelectric magnetic field sensor of claim 15, wherein a thickness ratio of adjacent magnetostrictive and piezoelectric layers is within 25% of a value given by the equation $n_{optim} = \frac{1}{1+\sqrt{\alpha}}$.

19. (original) A magnetoelectric magnetic field sensor, comprising:

a) a magnetostrictive layer having a longitudinal bias magnetic field, wherein the magnetostrictive layer has a L/T aspect ratio greater than 1.5;

b) a piezoelectric layer bonded to the magnetostrictive layer; and

c) a permanent magnet for creating the longitudinal bias magnetic field in the magnetostrictive layer.

20. (new claim) The magnetoelectric magnetic field sensor of claim 1, further comprising a voltage detector operable for detecting a voltage created by the piezoelectric layer.

21. (new claim) The magnetoelectric magnetic field sensor of claim 15, further comprising a voltage detector operable for detecting a voltage created by the piezoelectric layer.

22. (new claim) The magnetoelectric magnetic field sensor of claim 19, further comprising a voltage detector operable for detecting a voltage created by the piezoelectric layer.